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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,990	12/10/2001	Mark F. Bocko	176/61060 (2-1144-1026)	3504

7590 01/10/2005
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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT PAPER NUMBER

2631

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/015,990	Applicant(s) ^{JK} BOCKO ET AL.	
	Examiner Kevin M. Burd	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the amendment filed 9/30/2004, is a non-final office action.

Response to Amendment

2. Applicant has added new features to the independent claims. This new limitation overcomes the previous reference. The amendment necessitated an updated search be conducted. A new rejection of the claims is stated below as being anticipated by Bessios (US 6,606,718). This new reference also rejects claims 4-6, 10-12 and 16-18 that were previously indicated as having allowable subject matter. Newly added claims 22-24 are also rejected below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4-8, 10-14 and 16-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Bessios (6,606,718).

Regarding claims 1, 7, 13 and 19-21, Bessios discloses a method and apparatus for interleaving data. Bits are interleaved as shown in figure 3. The data bits have a separation in figure 3 of 11 bits. The set of values are interleaved in accordance with an interleaving depth selected based on an error constraint ER and the M-bit error correction capability to provide a predefined distance between adjacent elements (column 4, lines 3-18). Therefore, the distance between bits is adjustable and the distance is at least one.

Regarding claims 2, 8 and 14, Bessios further discloses the transmitted interleaved data stream will be received and the original data stream will be recovered (figure 5).

Regarding claims 4-6, 10-12 and 16-18, Bessios discloses the method of computing the order of the interleaved sequence in figure 4. The sequence shown in figure 3 will have a distance of 11 except when the sequence jumps from the end of the code to the beginning. The distance in this case will be 12.

Regarding claims 22-24, the distance between the components of the code in figure 3 is determined prior to interleaving and, once interleaving begins, is set.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bessios (6,606,718) in view of Soneda et al (US 4, 441,184).

Regarding claims 3, 9 and 15, Bessios discloses the method and apparatus for interleaving data as stated above in paragraph 3. Bessios does not disclose interpolating the recovered data for errors. Soneda discloses an interpolation stage for compensating for uncorrectable erroneous data words in column 3, lines 13-20. This allows uncorrectable errors to be compensated for so down stream elements do not process this erroneous information. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate Soneda into the method and apparatus of Bessios for the reason stated above.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chheda et al (US 6,704,370) discloses a method of communication using interleaving where the number of skipped items is adjustable as shown in figure 5.

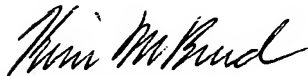
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Burd
1/9/2005

KEVIN BURD
PRIMARY EXAMINER